REMARKS

Upon entry of this Amendment, claims 1-10 and 15-27 will be pending in the present application. Claims 1, 6, 15, 21 and 22 are independent claims. Claims 1, 6, 15, 17, 21 and 22 are amended by this Reply.

Objections To The Drawings

The Examiner objected to the drawings, requiring that the recited feature "the TFT includes an etch stopper formed on the doped amorphous silicon layer and between the source and drain electrodes" in claim 17 must be shown or the feature canceled from the claim. Applicant has amended claim 17 to recite "an etch stopper formed on the amorphous silicon layer and between the source and drain electrodes".

The Examiner further objected to the drawings, requiring that the recited feature "an interlayer insulator formed entirely over the substrate, having a first and a second contact holes which respectively expose a portion of source and drain regions therebelow, wherein the source and drain electrodes are formed on the interlayer insulator to respectively contact the source and drain regions" in claim 19 must be shown or the feature canceled from the claims. Applicant respectfully traverses.

The claim is supported on page 12, lines 1-7 of the Specification. Figure 5C shows a third insulating layer 210, formed over the whole substrate 1, wherein the third insulating layer 210 serves as an interlayer insulator. Figure 5C shows contact holes 212 and 214, each respectively exposing the source and drain regions 204c and 204d. Next, as shown in Fig. 5D, source and drain electrodes 216 and 218 are formed on the third insulating layer 210 (serving as an interlayer insulator) and are electrically connected with the source and drain regions 204c and 204d through the source and drain contact holes 212 and 214, respectively.

Applicant submits that the drawings disclose the features of claim 17 (as amended) and claim 19, as claimed. Reconsideration and withdrawal of the objection to the drawings are respectfully requested.

Claim Rejections Under 35 U.S.C. § 102

Claims 15, 16 and 22 stand rejected under 35 U.S.C. § 102(e) over U.S. Patent No. 6,221,543 B1 to Guehler for the reasons set forth in paragraph 1 of the Office Action. This rejection is respectfully traversed.

Guehler discloses a color filter RGB (see Figs 2a and 2b). Fig. 2a discloses a TFT 20 having a gate electrode 22 (top of TFT 20), source electrode 24 (left of TFT 20) and a drain electrode 26 (right of TFT 20), and contact hole 28 (right of TFT 20). It is clear from Fig. 2a, that color filter RGB makes no contact with the

source electrode. Fig. 2b, drawn along section lines 2b-2b confirms this arrangement (see element 24 in Fig. 2b).

Therefore, Guehler does not disclose a color filter layer overlapping only an edge portion of the source electrode, as recited in independent claim 15 (as amended) or the color filter overlapping only edge portions of the source ***and*** drain electrodes, as recited in independent claim 22.

Claim 16, dependent on claim 15, is patentable at least for the reasons stated with respect to independent claim 15. Reconsideration and withdrawal of this art grounds of rejection are respectfully requested.

Claim Rejections Under 35 U.S.C. § 103

Claims 1-3 and 6-8 stand rejected under 35 U.S.C. 103(a) over Guehler in view of U.S. Patent No. 5,994,721 to Zhong et al. (Zhong) for the reasons set forth in paragraph 2 of the Office Action. This rejection is respectfully traversed.

The Examiner admits that Guehler does not teach forming a color filter layer on and in direct contact with the source and the drain electrode, and asserts that Zhong fills this deficiency.

Zhong discloses a color filter 101, in contact with drain metal layer 29 and source metal layer 31 (see Zhong, Figs. 6c and 10). However, the color filter 101 is disposed over the entire source and drain, and is not limited to

overlapping the edge portions only (see Zhong, Col. 12, lines 48-58). Note that the holes, shown in Fig. 6c, do not create an overlap, but are only a point contact.

Therefore Zhong, like Guehler, does not disclose or suggest a color filter layer overlapping only edge portions of the source and the drain electrodes, as recited in independent claim 1 (as amended) and similarly stated in independent claim 6 (as amended).

Claims 2, 3, 7 and 8 depend on claims 1 and 6. Since neither Guehler, nor Zhong discloses or suggests the features of independent claims 1 and 6, Guehler, in view of Zhong, cannot render claims 1-3 and 6-8 obvious to one of ordinary skill in the art. Reconsideration and withdrawal of this art grounds of rejection are respectfully requested.

Claims 4 and 9 stand rejected under 35 U.S.C. 103(a) over Guehler in view of Zhong as applied to claims 1 and 6 above, and further in view of U.S. Patent No. 6,162,510 to Kashiwazaki et al. (Kashiwazaki) for the reasons set forth in paragraph 3 of the Office Action. This rejection is respectfully traversed.

Guehler and Zhong, argued above with respect to independent claims 1 and 6, fail to disclose or suggest the features of these independent claims. Kashiwazaki cannot fill this vacancy. Claims 4 and 9 depend from claims 1 and 6. Since neither Guehler, nor Zhong, nor Kashiwazaki discloses or suggests the

features of independent claims 1 and 6, Guehler, in view of Zhong, and further in view of Kashiwazaki, cannot render claims 4 and 9 obvious to one of ordinary skill in the art. Reconsideration and withdrawal of this art grounds of rejection are respectfully requested.

Claims 5 and 10 stand rejected under 35 U.S.C. 103(a) over Guehler in view of Zhong as applied to claims 1 and 6 above, and further in view of U.S. Patent No. 6,297,862B1 to Murade for the reasons set forth in paragraph 4 of the Office Action. This rejection is respectfully traversed.

Neither Guehler, nor Zhong (argued above with respect to claims 1 and 6) discloses or suggests the features of independent claims 1 and 6. Murade cannot fill this vacancy. Claims 5 and 10 depend (directly or indirectly) from claims 1 and 6. Since neither Guehler, nor Zhong, nor Murade discloses or suggests the features of independent claims 1 and 6, Guehler, in view of Zhong, and further in view of Murade, cannot render claims 5 and 10 obvious to one of ordinary skill in the art. Reconsideration and withdrawal of this art grounds of rejection is respectfully requested.

Claims 16, 17, 21, 23 and 25 stand rejected under 35 U.S.C. 103(a) over Guehler as applied to claims 15 and 22, in view of Kashiwazaki for the reasons set forth in paragraph 5 of the Office Action. This rejection is respectfully traversed.

The Examiner admits that Guehler does not teach forming a color filter layer on and in direct contact with the source and the drain electrode. Kashiwazaki cannot fill this vacancy. Kashiwazaki, like Guehler (argued above with respect to claims 15 and 22), does not disclose a color filter layer overlapping only an edge portion of the source electrode, as recited in independent claim 15 (as amended) or the color filter overlapping only edge portions of the source ***and*** drain electrodes, as recited in independent claim 22.

Claims 16, 17, 23 and 25 depend (directly or indirectly) on claims 15 and 22. Since neither Guehler, nor Kashiwazaki discloses or suggests the features of independent claims 15 and 22, Guehler, in view of Kashiwazaki cannot render claims 16, 17, 23 and 25 obvious to one of ordinary skill in the art. Reconsideration and withdrawal of this art grounds of rejection are respectfully requested.

With regard to independent claim 21, the Examiner admits that Guehler does not teach forming a color filter layer on and in direct contact with the source and the drain electrode. As such, the color filters of Guehler make no contact with the source and drain electrodes. Therefore, Guehler does not disclose or suggest the color filter overlapping only edge portions of the source

and drain electrodes, as recited in independent claim 21 (as amended). Kashiwazaki cannot fill this vacancy. Therefore Guehler, in view of Kashiwazaki, cannot render claim 21 obvious to one of ordinary skill in the art. Reconsideration and withdrawal of this art grounds of rejection are respectfully requested.

Claims 18, 19, 20 and 24 stand rejected under 35 U.S.C. 103(a) over Guehler as applied to claims 15 and 22, in view of Murade for the reasons set forth in paragraph 6 of the Office Action. This rejection is respectfully traversed.

The Examiner admits that Guehler does not teach forming a color filter layer on and in direct contact with the source and the drain electrode. Murade cannot fill this vacancy. Therefore Murade, like Guehler (argued above with respect to claims 15 and 22), does not disclose a color filter layer overlapping only an edge portion of the source electrode, as recited in independent claim 15 (as amended) or the color filter overlapping only edge portions of the source ***and*** drain electrodes as recited in independent claim 22.

Claims 18, 19, 20 and 24 depend (directly or indirectly) on claims 15 and 22. Since neither Guehler, nor Murade discloses or suggests the features of independent claims 15 and 22, Guehler, in view of Murade cannot render claims 18, 19, 20 and 24 obvious to one of ordinary skill in the art. Reconsideration and withdrawal of this art grounds of rejection are respectfully requested.

Claims 26 and 27 stand rejected under 35 U.S.C. 103(a) over Guehler as applied to claims 15 and 22, in view of U.S. Patent No. 6,166,786A to Ohkubo et al. (Ohkubo) for the reasons set forth in paragraph 7 of the Office Action. This rejection is respectfully traversed.

The Examiner admits that Guehler does not teach forming a color filter layer on and in direct contact with the source and the drain electrode. Ohkubo cannot fill this vacancy. Ohkubo, like Guehler (argued above with respect to claims 15 and 22), does not disclose a color filter layer overlapping only an edge portion of the source electrode, as recited in independent claim 15 (as amended) or the color filter overlapping only edge portions of the source ***and*** drain electrodes as recited in independent claim 22.

Claims 26 and 27 depend (directly or indirectly) on claim 22. Since neither Guehler, nor Ohkubo discloses or suggests the features of independent claim 22, Guehler, in view of Ohkubo, cannot render claims 26 and 27 obvious to one of ordinary skill in the art. Reconsideration and withdrawal of this art grounds of rejection are respectfully requested.

CONCLUSION

Applicant points out that all of the Examiner's comments have been addressed and that all of the Examiner's objections and rejections have been

overcome, thereby placing all claims pending in the present Application in condition for allowance. Allowance of the claims is respectfully solicited.

In the event that any outstanding matters remain in this application, Applicant requests that the Examiner contact Percy L. Square, Reg. No. 51,084 at (703) 205-8034 to discuss such matters.

Attached hereto is a marked-up version of the changes made to the application by this Amendment.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By _____
Joseph A. Kolasch
Reg. No. 22,463

JAK/PLS:acs
3430-0138P

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

Attachment: Version with Markings to Show Changes Made

(Rev. 02/06/01)

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

The claims have been amended as follows:

1. (Amended) A liquid crystal display (LCD) device comprising:

a substrate;

a gate electrode over the substrate;

a semiconductor layer aligned with the gate electrode;

an insulation layer between the gate electrode and the semiconductor layer;

a source electrode and a drain electrode electrically connected with the semiconductor layer;

a color filter layer [on and in direct contact with] overlapping only edge portions of the source and the drain electrodes;

a planarization layer over the color filter layer and the source and the drain electrodes, the planarization layer having an opening exposing the drain electrode thereunder; and

a pixel electrode on the planarization layer and electrically connected with the drain electrode via the opening in the planarization layer.

6. (Amended) A method of forming liquid crystal display (LCD) device, the method comprising:

forming a substrate;

forming a gate electrode over the substrate;

forming an insulation layer on the gate electrode and the substrate;

forming a semiconductor layer, aligned relative to the gate electrode, on the insulating layer;

forming a source electrode and a drain electrode electrically connected with the semiconductor layer;

forming a color filter layer [on and in direct contact with] overlapping only edge portions of the source and the drain electrodes;

forming a planarization layer over the color filter layer and the source and drain electrodes, the planarization layer having an opening exposing the drain electrode thereunder; and

forming a pixel electrode on the planarization layer and electrically connected with the drain electrode via the opening in the planarization layer.

15. (Amended) A liquid crystal display device comprising:

a thin film transistor (TFT) formed on a substrate, including a gate electrode, a source electrode, and a drain electrode;

a color filter layer overlapping [at least one an] edge [portion] portions of the source and drain electrodes;

a planarization layer formed on the TFT and on the color filter; and

a pixel electrode formed on the planarization layer and electrically contacting the drain electrode.

17. (Amended) The liquid crystal display device of claim 16, wherein the TFT further includes an etch stopper formed on the [doped amorphous] silicon layer and between the source and drain electrodes.

21. (Amended) A method of manufacturing a liquid crystal display device, the method comprising:

providing a substrate;

forming a gate electrode on the substrate;

depositing sequentially a gate insulating layer, a pure semiconductor layer and a doped semiconductor layer over the substrate;

etching the pure semiconductor layer and the doped semiconductor layer to form an active layer;

forming a source electrode and a drain electrode on the active layer;

forming a color filter, the color filter overlapping [a portion] only edge portions of the source and drain electrodes;

etching a portion of the doped semiconductor layer between the source and drain electrodes to form a channel region of a resulting intermediate structure;

forming a planarization layer over the intermediate structure, the planarization layer including a drain contact hole to expose a portion of the drain electrode; and

forming a pixel electrode on the planarization layer, the pixel electrode electrically contacting the drain electrode via the drain contact hole.

22. (Amended) A method of manufacturing a liquid crystal display device, the method comprising:

providing a substrate, the substrate including first and second regions;

forming a thin film transistor (TFT) on the first region of the substrate, the TFT having a gate electrode, an active layer, and source and drain electrodes;

forming a color filter on a second region of the substrate, the color filter overlapping [at least] only edge portions of the source and drain electrodes;

forming a planarization layer on the TFT and the color filter, the planarization layer including a drain contact hole to expose a portion of the drain electrode; and

forming a pixel electrode on the planarization layer, the pixel electrode electrically contacting the drain electrode via the drain contact hole.